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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,381	09/12/2003	Robert Dubrow	40-002810US	6710

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EXAMINER

MAYES, MELVIN C

ART UNIT PAPER NUMBER

1734

DATE MAILED: 11/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/661,381	DUBROW, ROBERT	
	<b>Examiner</b>	<b>Art Unit</b>	
	Melvin Curtis Mayes	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-43,45-56 and 58-65 is/are pending in the application.
- 4a) Of the above claim(s) 3,24,39,41 and 45 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 40,42,43,46-56,58-61 and 65 is/are allowed.
- 6) ☒ Claim(s) 1,2,4-23,25-38, 62-64 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

(1)

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

(2)

Claims 1, 2, 4-23, 25-38 and 62-64 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "substantially" in claims 1 and 23 is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

It is not clear from the specification what amount of adhering is considered "substantially by" van der Waals forces, particularly when dependent claims also claim that the contacting creates friction forces. The specification does not provide a standard for determining what degree of the adhering is encompassed by "substantially by van der Waals forces."

Claim 62 recites the limitation "the first article" and "the second article." There is insufficient antecedent basis for this limitation in the claim. Claim 62 depends from Claim 61 in which first and second surfaces are attached, not two first surfaces.

***Claim Rejections - 35 USC § 102 and 103***

(3)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(4)

Claims 1, 2, 4-23 and 25-38 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Knowles 2004/0071870.

Knowles 2004/0071870 discloses a method of making and using a tape that sticks by intermolecular (van der Waals) forces comprising: providing a base, carbon fibers bonded to the base and carbon nanotubes (semiconductor nanofibers) deposited onto the tips of the carbon fibers and arranged in a “mop” and configured to form a strong van der Waals bond when pressed against a mating surface. The nanotubes are grown on the fibers by PE-CVD. The nanotubes can be coated with SiC. The adhesive strength of the nanofibers ranges from 2.6 (1.8 N/cm<sup>2</sup>) to hundreds of psi, and nanotubes are packed to a density of 10<sup>6</sup>-10<sup>7</sup>/mm<sup>2</sup> (entire document, Fig. 6C).

The subject matter used in the present rejection is properly supported by the provisional application 60/390239 filed June 17, 2002.

Further, by arranging carbon nanotubes in a “mop” on the tips of the carbon fibers as shown in Figure 6, nanofibers are obviously provided attached to first surface and in which a portion contact the mating (second) surface on a side surface of the nanofibers, as claimed.

(5)

Claims 1, 2, 4-12, 22, 23 and 25-38 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Lee et al. 2004/0098023.

Lee et al. disclose a method of implanting a vaso-occlusive device comprising: providing a device comprising polymer or metal core member and fibrous structure coupled on the core member; and inserting the device into a body cavity (second surface or article). The fibrous structure includes polymer nanofibers (entire document).

Further, by inserting a vaso-occlusive device having a fibrous structure of polymer nanofibers in a body cavity, at least a portion of nanofibers of a first surface (device) obviously contact a second surface or second article (body cavity) on the side surface of the nanofibers and obviously create van der Waals forces sufficient to adhere the surfaces together and friction forces which adhere the articles, as claimed, because the presence of nanofibers facilitates intimate atomic contact with the surface of the body cavity resulting in van der Waals forces and thus adhesion between the device and body cavity.

***Allowable Subject Matter***

(6)

Claims 40, 42, 43, 46-56, 58-61, 65 allowed.

(7)

Claims 62-64 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

*Response to Arguments*

(8)

Applicant's arguments filed September 12, 2005 have been fully considered but they are not persuasive.

Applicant argues that each and every embodiment, figure and/or description contained in Knowles, the carbon nanotube arrays used as adherent material are directly normal to the surface to which they would adhere and argues that there is no description of side contact to that would adhere surfaces together substantially by van der Waals forces. Applicant argues that in Lee, while the fibrous structure may provide a high level of surface area to which cells may attach, it is little or no relation to the use of nanofibers as the adhesive element for joining articles through van der Waals forces.

(9)

While Knowles does disclose carbon nanotubes that are aligned on the tips of the carbon fibers, the reference also discloses growing carbon nanotubes as "mops" at the tips of carbon fibers. These "mops" of carbon nanotubes are not aligned at the tips of the carbon fibers (see Fig. 6d and Fig. 11 of Provisional Application 60/390,239). Thus some of the carbon nanotubes in the mop will contact the second surface on a side surface of the nanotubes, as claimed. With respect to the Lee reference, the presence of nanofibers on the core member facilitates intimate atomic contact with the surface of the body cavity resulting in van der Waals forces and thus adhesion between the device and body cavity by van der Waals forces.

***Conclusion***

(10)

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


(11)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris Fiorilla can be reached on 571-272-1187. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1734

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Melvin Curtis Mayes  
Primary Examiner  
Art Unit 1734

MCM  
November 21, 2005